VOL. 6, No. 2 FEBRUARY 1952

CHRONICLE OF THE WORLD HEALTH ORGANIZATION

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SCHEDULE OF MEETINGS

11-14 February **UN Working Party on Insecticides, Geneva**

In accordance with a resolution of the Economic and Social Council of the United Nations, a working party was convened to study the world position with regard to the supply of, and requirements for, DDT and BHC. In addition to representatives of the Economic and Social Council and of the United Nations Economic Commission for Europe, delegates from Brazil, Ceylon, Egypt, France, Italy, Switzerland, the United Kingdom, and the USA attended. Also present were observers from FAO, UNICEF, and WHO.

14-30 March **International Symposium on Yaws Control, Bangkok**

WHO, in collaboration with the Government of Thailand, is sponsoring a symposium which will bring together experts on yaws control from all parts of the world. The programme of this symposium will be found on page 42.

24 March-5 April **Working Conference on Nursing Education, Geneva**

Specialists on various aspects of nursing education will meet, under the auspices of WHO, to discuss relevant problems. Nursing educators from Brazil, Canada, China, Finland, France, India, Switzerland, the United Kingdom, the USA, and Yugoslavia are expected to attend.

FIRST EUROPEAN SEMINAR ON ALCOHOLISM

In every country where the use of alcoholic beverages is part and parcel of the cultural pattern, excessive use leads to problems of varying magnitude. Governments have always taken some account of these problems, but most of them have left the matter in the hands of the police and, in some instances, to the social-welfare authorities. As a considerable part of the problem of alcohol is constituted by a disease condition known as alcohol addiction, which yields to medical psychiatric treatment only, not much headway has been made by methods limited to the social action level.

The disease nature of alcoholism has become more and more apparent through clinical and laboratory investigations of the past 15 years. These investigations may have created the erroneous impression that all excessive drinking must be regarded as a disease manifestation. There are, however, forms of excessive drinking which are evidently entirely social in their origins and their consequences and which, therefore, cannot be treated medically. Furthermore, social and cultural elements are involved even in the etiology of the true disease of alcohol addiction. Thus, the prevention and treatment of this disease involves to some extent the techniques of applied sociology. Sociologists and physicians who arbitrarily separate, or entirely neglect, either the medical or the social aspects of the problem inevitably frustrate their own endeavours.

When WHO integrated the control of alcoholism into its public-health programme, it took full cognizance of the complex nature of the problem. Evidence of this attitude was seen in the first European seminar on alcoholism, conducted by the WHO Regional Office for Europe, in collaboration with the Danish Government and the United Nations, from 22 October to 3 November 1951, in Copenhagen. The participation of the Social Affairs Division of United Nations, which sponsored 20 fellowships for this project, emphasizes the close relationship between social action and public-health attack which must be considered in dealing with the problems of alcohol. The success of the seminar was due to a great extent to this co-operation.

The seminar was devised for the training of public-health workers, welfare administrators, and social workers engaged in the treatment and care of alcoholics, as well as for research workers in this field. While the primary object was to arouse interest and confidence in the medical psychiatric approach to alcohol addiction, there was ample provision for the discussion of alcohol problems outside the jurisdiction of medicine.

The programme consisted of 30 lectures and 76 hours of group discussions. Eight discussion groups were arranged so that each Fellow could participate in two groups per week, or in a total of four groups for the whole course.

The lectures and hours of discussion were distributed by broad subjects as follows :

	Number of lectures	*Hours of group discussion*
Etiology and disease description	7	Incidental to various discussion groups
Therapy	9	18
Public care	3	10
Social work		
Social work proper	3	10
Employment relations	—	4
Criminological aspects	1	6
Governmental controls	—	8
Cultural aspects	2	12
Background lectures	5	—
Research	—	8

The contents of these lectures and discussions will be published in the near future. While the publication which results may serve as a brief textbook on alcoholism, it must be pointed out that recommendations and resolutions are not the functions of a seminar.

The faculty comprised 28 internationally known experts from Europe and the Americas. The 61 Fellows who attended the seminar came from 11 European countries : Austria, Belgium, Denmark, Finland, France, Federal Republic of Germany, Norway, Sweden, Switzerland, the United Kingdom, and Yugoslavia. The professions represented by the Fellows are listed below :

Physicians	25
Public-health administrators	5
Social-welfare administrators	5
Social workers	15
Public-health nurses	5
Psychologists	2
Biochemist	1
Sociologist	1

The seminar received wide and favourable publicity. Three radio broadcasts by members of the faculty and Fellows were arranged by the Danish State Broadcasting Company, in collaboration with international networks.

The European seminar marked the inauguration of an active programme suggested by the Subcommittee on Alcoholism of the WHO

Expert Committee on Mental Health. A South American seminar is contemplated for 1953.

WHO regional offices are considering, among other activities in the control of alcoholism, the establishment of abstract archives of the alcohol literature in libraries and research centres. Recommendations by the Subcommittee on Alcoholism concerning the treatment of alcohol addiction in its early stages will be widely distributed. Another important project is the survey of drinking patterns in new health-demonstration areas.

The active participation of WHO in the control of alcoholism is giving a new impetus to the endeavours to cope with this problem.

POPULATION CONTROL

WHO Undertakes Pilot Study at Request of Government of India

With the aid of WHO technical assistance, the Government of India is embarking on a one-year pilot study in family planning as a means of population control. The reason for this pilot study is to be found in the rapid increase in population and the consequent pressure on food supplies.

India's population, estimated in 1950 at 358 million, has increased by 23 million during the past five years. The death-rate has fallen from 33 per thousand, at the beginning of the century, to 17.7. In other words, the annual number of deaths for a population of 358 million would have been 11.8 million 50 years ago, whereas in recent years the annual number of deaths for the country stands at 6.3 million, or 5.5 million fewer. Such a comparison can give, of course, only a very rough idea of the repercussion of the decrease in death-rates.

Two-thirds of India's population live on one-quarter of the land space. In the rich agricultural area of the Indo-Gangetic Plain, there are districts with a population as high as 900 to the square mile. The population has increased most in the densest areas, and pressure on food supplies is heavy in parts of Bihar and the United Provinces. As recently as June of last year, Bihar was struck by famine, and WHO responded to an appeal for emergency aid to protect this area's 20 million inhabitants against possible cholera and malaria outbreaks.

The foregoing is a brief background to the request of the Government of India for WHO assistance in carrying out experimental studies in family planning.

The request for aid was conditional upon the experiment's being restricted to a method of family planning based on the " safe period " of infertility in a woman—the so-called "rhythm method". This method was chosen in preference to mechanical or chemical means because it is the one most compatible with Indian cultural traditions and ways of life. It was, in fact, the one method against which no objections had been raised by any religious group. However, misleading Press statements caused some concern among adherents of the Roman Catholic Church; but this matter was clarified by a statement by the Director-General of WHO which pointed out that, from recent addresses of His Holiness Pope Pius XII,[1] it was clear that the Roman Catholic Church did not forbid this method of family planning so long as it was justified by medical, eugenic, economic, or social reasons.

Previous studies on the effectiveness of the " safe period " method of family planning, carried out in America, have shown that it is effective among couples who follow it carefully and regularly. These studies, however, have been made mainly on urban populations. Whether the method would apply also to people in villages and industrial sections is still to be determined.

WHO, in acceding to the request of the Indian Government for aid and accepting the condition laid down, engaged as consultant Dr. Abraham Stone, of New York, who is Vice-President of the Planned Parenthood Association, and who has had more than 25 years' experience in family-planning techniques, to carry out a preliminary survey, during last November and December. On the basis of the studies to be undertaken in India, as a result of Dr. Stone's visit, it is hoped that within one or two years sufficient factual and reliable data will become available to evaluate the suitability of the " safe period " method as a measure of family planning for India. Accordingly, plans have been laid for clinical research studies on this matter to be carried out at six centres in India. At each of these research centres, about 100 couples will be interviewed, and individual " safe periods " will be calculated for each woman. These women will return every month for four to six months to have individual menstrual cycles recorded. There will be a follow-up period of a year to 18 months in which to determine how effective the " safe period " has been and whether the couples have carried out the instructions given to them at the centre.

The assistance of WHO will be confined to the use of the " safe period " method, and the centres will be operated under the supervision of the Indian Government. Two WHO family-planning field workers will travel from centre to centre to guide the work and give all necessary advice.

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[1] *Osservatore Romano* 29/30 October and 29 November 1951

MEDICAL CERTIFICATION OF CAUSE OF DEATH

The physician faced with the necesssity of filling out a death certificate often finds his task complicated by the fact that the patient suffered from several morbid conditions. In such cases, he may have to ask himself exactly what the statistical office wants : in what order should the several morbid conditions be listed, and how complete a description of each is required ? To aid the certifier in supplying adequate and accurate information, WHO has recently published a booklet, prepared by the WHO Centre for Classification of Diseases, which gives " instructions for physicians on the use of the International Form of Medical Certificate of Cause of Death ".[1]

In 1948, the Sixth Decennial International Revision Conference decided that the cause of death to be tabulated in mortality statistics should be the *underlying cause*, defined as " (*a*) the disease or injury which initiated the train of morbid events leading directly to death, or (*b*) the circumstances of the accident or violence which produced the fatal injury ".[2] To ensure uniformity in the application of this principle, the Conference designed the International Form of Medical Certificate of Cause of Death, which is reproduced in fig 1.

Use of the International Form

Direct cause of death

The first entry, I (*a*), is one which must always be made. What is wanted here is the disease, injury, or complication which directly preceded death— *not* the mode of dying (e.g., heart failure, respiratory failure), which should not be stated at all. If only one morbid condition is present at death, this will be the sole entry on the certificate.

Antecedent causes

In I (*b*) and (*c*) are recorded conditions antecedent to the direct cause of death both in time and in etiological or pathological relationship, the direct cause being " due to " or " as a consequence of " these conditions. I (*c*) represents the starting point of the sequence when there is more than

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[1] World Health Organization (1952) *Medical certification of cause of death : instructions for physicians on use of International Form of Medical Certificate of Cause of Death*, Geneva, 20 pages, price : 1/-, $0.20, or Sw. fr. 0.75. English edition now available ; French, in preparation.

[2] World Health Organization (1948) *Manual of the International Statistical Classification of Diseases, Injuries, and Causes of Death*, Geneva, 1, 345

one antecedent cause; otherwise, I (*b*) is the starting point and the only entry under " antecedent causes ".

Underlying cause

Provided the certificate has been properly filled out, the underlying cause of death, that which is used as the basis for statistics, will be the one recorded on the lowest line of part I of the form. For example, if there is no antecedent cause worth mentioning, then I (*a*), the direct cause

FIG. 1. INTERNATIONAL FORM OF MEDICAL CERTIFICATE OF CAUSE OF DEATH

CAUSE OF DEATH		Approximate interval between onset and death
I		
Disease or condition directly leading to death *	(*a*)	.....
	due to (or as a consequence of)	
Antecedent causes Morbid conditions, if any, giving rise to the above cause, stating the underlying condition last	(*b*)	.....
	due to (or as a consequence of)	
	(*c*)	.....
II		
Other significant conditions contributing to the death, but not related to the disease or condition causing it	.....	.....
	.....	.....

* *This does not mean the mode of dying, e.g., heart failure, asthenia, etc. It means the disease, injury, or complication which caused death.*

of death, is the underlying cause as well; if there is but one intervening step between the initial and direct cause of death, I (*b*) is the last entry in part I of the form and, consequently, the underlying cause; when there are two conditions antecedent to the direct cause of death, the starting point of the sequence is recorded in I (*c*), and this is then the underlying cause.

Other notations

Part II provides space for noting any other condition which, though not in the casual sequence in part I, contributed something to the fatal outcome, e.g., a chronic disease in a person who died from an accidental injury. The condition entered in part II must not be related to the direct cause of death.

Whenever the interval between onset of each condition and the date of decease is known, even approximately, this should be entered in the column provided. Such information supplies a useful check on the sequence of events in part I, as well as data concerning the duration of illness for certain diseases.

Illustrative example of certification

A number of examples of proper certification are given in the booklet, but one will suffice to illustrate the importance of accurately recording the sequence of morbid conditions so that the actual underlying cause will be tabulated as such.

A diabetic patient who has been under insulin control for many years suddenly dies from a degenerative heart condition. Depending on the role played in the fatal outcome by one condition or the other, or both, the following entries are possible :

1. Assuming that the heart condition resulted from the long-standing diabetes, the sequence would be

I (*a*) Myocardial degeneration
(*b*) Diabetes

and the statistical office would select diabetes as the underlying cause of death, with the heart condition as a complication causing death.

2. If the heart condition developed independently of the diabetes, the two conditions would be entered

I (*a*) Myocardial degeneration
II Diabetes

and the heart disease would be recorded as the underlying cause, with diabetes merely a contributory condition.

3. If a patient suffering from both conditions dies from some other complication of diabetes, the heart condition playing only a subsidiary role, and perhaps not being attributable to the diabetes, then the certificate would be in the form

I (*a*) Coma
(*b*) Diabetes
II Myocardial degeneration.

Any one of the above certificates could be correct and would not be questioned by the statistical office. In some instances, however, a certificate may record an impossible sequence, such as

I (*a*) Diabetes
(*b*) Myocardial degeneration.

I (*a*) could not be " due to " I (*b*), and a certificate of this type would indicate that the physician did not understand the way in which the form is intended to be used.

Common Errors on Death Certificates

Aside from errors in recording causes in their proper sequence, most of the unsatisfactory entries on death certificates are due to the use of

indefinite or inadequate terms. Some of the more common deficiencies of this type are :

1. Failure to explain or elaborate descriptions of symptoms which may arise from diseases classified under several different headings in the International Classification—e.g., ascites, convulsions, toxaemia, etc.

2. Lack of specificity in naming the causative agent of conditions which could result from several types of infection or poison—e.g., dysentery may be bacillary, amoebic, or of other protozoal origin. If the certifier is uncertain of the causative agent, it saves useless inquiries if he writes " cause unknown " after the condition.

3. Inadequate description of a term which may connote any of several morbid conditions having distinctive categories in the International Classification—e.g., bronchitis should be classified as acute, chronic, asthmatic, capillary, or emphysematous.

4. Failure to mention the organ or part of the body affected by a disease. For malignant neoplasm, for example, it is necessary to state what was the site of the primary growth, even though this may have been removed long before death, if secondary or metastatic growths were the cause of death.

5. Omission of statement of circumstances in which a morbid condition arose in cases in which this is required for classification—e.g., it should be stated whether an abortion was spontaneous or induced and, if the latter, by whom and for what reason. Mention should also be made of whether or not the abortion was accompanied by sepsis or toxaemia.

A useful annex to the booklet gives approximately 120 examples of incomplete descriptions of cause of death together with the additional information needed to make satisfactory statistical classification possible.

ACHIEVEMENTS OF A MALARIA-CONTROL TEAM IN INDIA

The first WHO/UNICEF malaria-control team, which has been working for more than two years in the Terai region of North India,[1] can claim noteworthy success in its operations. Local personnel, directed by WHO malariologist Dr. P. C. Issaris, are giving almost 100% protection against malaria to inhabitants of 1,300 villages. Systematic spraying with

[1] *Chron. World Hlth Org.* 1949, 3, 136 ; 1950, 4, 192

DDT has resulted in a great reduction in the incidence of malaria, as has been proved by malariometric and entomological surveys. Before the spraying operations were undertaken, microscopical examination of blood samples from thousands of babies revealed that from 50% to 75% of the infants contracted malaria during their first year of life ; after the first year of DDT spraying, these figures fell to 2.6% ; after the second year, no babies were becoming infected.

Indian nurses attached to the team and assisting the WHO public-health nurse, Miss E. L. Pepper, have accounted for much of the team's success. In addition to collecting blood-slides from infants, they have given advice to mothers, treated children for minor ailments, and established actively functioning maternal and child health centres in several parts of the region. At one such centre, as many as 450 mothers attend prenatal and postnatal clinics monthly.

FIG. 2. MALARIA-CONTROL TEAM-I

Dr. P. C. Issaris, leader of the Terai team, examines the spleen of an infant

FIG. 3. MALARIA-CONTROL TEAM-II

Laboratory tests are an important part of malaria-control operations, whether they consist of examining blood-slides or, as here, of checking to see whether the DDT sprayed on the walls of village houses is still giving active protection against malaria

The results of the malaria-control operations are reflected in economic improvements in the region : official figures for the period 1948-51 show that the population grew from 167,000 to 284,248 and that the area under cultivation increased by 35,818 acres. Production of food grains rose from 55,000 tons in 1947-8 to 73,500 tons in 1950-1. Special attention is now being given to this aspect of malaria control, and the project has become a joint FAO/WHO programme to increase food production and raise health standards in the Terai area.

SECOND SEMINAR FOR EUROPEAN SANITARY ENGINEERS

The second seminar for European sanitary engineers was held in Rome, Italy, from 11 to 17 November 1951, under the auspices of the Government of Italy, the Rockefeller Foundation (Division of Medicine and Public Health), and the WHO Regional Office for Europe. Participants numbered 68 and included representatives of the sponsoring agencies and of 16 European countries—Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy,. the Netherlands, Norway, Portugal, Sweden, Switzerland, the United Kingdom, and Yugoslavia. In addition, ten selected engineering students from Italian universities attended as observers.

The programme of the seminar was designed to stimulate free discussion of a limited number of subjects of general interest to European nations, such as : the public-health engineer in town, regional, and general planning ; the formation of national and European associations of sanitary engineers ; considerations involved in the development of international drinking-water standards; financing of sanitary works; sewage disposal in communities without sewers ; small sewage-treatment plants; use of sewage for irrigation; and use of sewage sludge as fertilizer.

The participants in the seminar reached the following decisions:

1. It was recommended that another seminar be held in 1952, under the sponsorship of the World Health Organization and the Rockefeller Foundation, along lines similar to those of the 1951 seminar.

2. It was decided that an ad hoc committee be set up, the terms of reference of this committee to include:

(a) review of the results and conclusions of the second seminar, including the report on it which is to be published by the sponsoring agencies in English and French;

(b) giving advice to the sponsoring agencies on the nature, time, and place of the third seminar, to take place in 1952, allowing sufficient

latitude in the programme details for the introduction of topics of particular interest to the host country or to its neighbours;

(c) advising and assisting the sponsoring agencies in studying and exchanging scientific information on technical questions in addition to those recommended for discussion at the third seminar;

(d) studying and reporting to the third seminar on the existing national associations of sanitary engineers, with the object of determining the desirability and practicability of forming, at some future date, a European association of sanitary engineers.

3. It was recommended that WHO study the provision of facilities for collecting, assembling, and distributing information on environmental sanitation, which is available in each of the participating countries and which would be of value to the others in the region.

4. Attention was called to the importance of consulting sanitary engineers in the early stages of planning of sanitary improvements in order to avoid difficulties in implementing such plans.

5. Recognizing the extreme difficulty at the present time of formulating international standards of water quality, the seminar recommended that a small committee be charged with the task of establishing a basis for the development of bacteriological standards of water used for drinking and culinary purposes. As a first step, the work might start with international carriers. The desirability of setting up international standards for methods of water analysis was expressed.

6. Consideration was given to the problem of disposal of excreta in localities in which there are no sewers ; and a study of the handling, transport, and ultimate disposal of excreta was recommended, particular attention to be given to the aspects of pollution of soil and ground-water.

It was considered desirable, also, that studies be instituted on the problems associated with small sewage-treatment plants and subsurface disposal.

The spreading of crude or insufficiently treated sewage over the ground for irrigation and fertilization purposes meets with many objections from a sanitary point of view. It was recommended that, in localities where this is the practice, there should be regulations governing the utilization of the agricultural products and the methods of cultivation. Further studies should be undertaken on the physical, chemical, bacteriological, and economic aspects of the purification of sewage and sludge as related to their utilization for agricultural purposes.

7. At present there are no standard definitions in all languages of the many specialized terms used in sanitation and sanitary-engineering practice. The seminar recommended that its ad hoc committee investigate methods by which a glossary of such terms might be produced, taking into account

the work now being done along these lines by other national or international organizations.

* * *

This second meeting of sanitary engineers in Europe is a stage in the development of a programme which should be viewed over a period of many years. The first seminar, held at The Hague in 1950,[1] marked the beginning of efforts to break down the isolation in which European sanitary engineers have been working—isolation from their colleagues in other countries and also from the public-health medical officer and other workers concerned with the protection of man against the dangers of his environment. The objective of bringing European sanitary engineers into closer contact with their colleagues in other countries has been partially realized. The time is approaching to consider the second objective of achieving closer contact among the members of the environmental-sanitation team, particularly public-health medical officers and sanitary engineers. It was suggested at the second seminar that a joint conference of these two groups might be convened in Europe in 1952 or 1953.

[1] *Chron. World Hlth Org.* 1951, 5, 81

PROGRAMME OF YAWS-CONTROL SYMPOSIUM

Arrangements have been completed for the WHO-sponsored International Symposium on Yaws Control, which will bring together in Bangkok, Thailand, next month experts on treponematoses from many different countries. The schedule of lectures and discussions follows :

14 March—The Biology of Yaws

1. Unknowns in yaws—Dr. C. M. Hasselmann
2. Present status of yaws research—Dr. T. B. Turner
3. Non-specific factors in the epidemiology of yaws—Dr. K. R. Hill

Round-table discussion—Dr. M. Soetopo (Indonesia), Chairman; Dr. C. R. Rein (USA), Rapporteur

15 March—Antibiotics in the Treatment of Yaws

1. Penicillin in the therapy of yaws—Dr. S. Levitan
2. Time-dose relationships of penicillin therapy of the treponematoses, with special reference to yaws :

(*a*) Laboratory basis for effective therapy—Dr. D. K. Kitchen and Dr. C. R. Rein

(*b*) Clinical basis for effective therapy—Dr. C. R. Rein and Dr. D. K. Kitchen

3. Antibiotics other than penicillin in the treatment of yaws—Dr. K. R. Hill

Round-table discussion—Dr. R. V. Rajam (India), Chairman; Dr. R. R. Willcox (United Kingdom), Rapporteur

17 March—Extent and Nature of the Yaws Problem

1. In the Americas—Dr. G. Samamé
2. In Africa—Dr. C. J. Hackett
3. In the French Overseas Territories—Dr. M. A. Vaucel
4. In the South Pacific Islands—Dr. E. Massal

Round-table discussion—Dr. Boon Suvanasara (Thailand), Chairman; Dr. K. R. Hill (Jamaica), Rapporteur

18 March—Development of Plans of Operation

1. Experiences in South-East Asia—Dr. N. Jungalwalla
2. The approach to yaws control in Brazil—Dr. F. N. Guimarães
3. Problems in logistics and public-health administration—Dr. K. W. C. Sinclair-Loutit

Round-table discussion—Dr. F. Cruz (Philippines), Chairman; Dr. G. Samamé (WHO), Rapporteur

19 March—Demonstration, Survey, and Training Phase

1. Teaching and training methods—Dr. D. R. Huggins
2. Diagnostic aids in mass treatment campaigns against yaws—Dr. C. R. Rein
3. Public-health nursing and health education in yaws control—Miss J. Delmotte

Round-table discussion—Dr. R. E. Anderson (Malaya), Chairman; Dr. C. J. Hackett (United Kingdom), Rapporteur

20 March—Expansion Phase

1. Yaws-control activities in Haiti—Dr. E. Petrus
2. Experiences in Indonesia—Dr. R. Kodijat
3. Administrative problems and experiences—Dr. S. Daengsvang and Mr. S. Polack

Round-table discussion—Dr. M. A. Vaucel (France), Chairman; Dr. F. W. Reynolds (WHO), Rapporteur

21 March—Consolidation Phase

1. Experiences in Africa—Dr. C. J. Hackett
2. Plans for the Philippines—Dr. F. Cruz
3. Yaws control : a means of promoting rural health services—Dr. J. L. Troupin and Dr. F. W. Reynolds

Round-table discussion—Dr. D. Ungar (Nigeria), Chairman; Dr. C. M. Hasselmann (Germany), Rapporteur

22 March—Role of International Organizations

1. Role of WHO—Dr. W. Bonne
2. Role of UNICEF—Mr. S. M. Keeney

Round-table discussion—Dr. K. W. C. Sinclair-Loutit (WHO), Chairman; Dr. N. Jungalwalla (WHO), Rapporteur

* * *

From 24 to 30 March, a field demonstration and training seminar will be held at Ubol, site of the operations of the WHO/UNICEF yaws-control team in Thailand.

Reports of Expert Groups

PREVENTION AND TREATMENT OF SEVERE MALNUTRITION IN TIMES OF DISASTER

Acting upon a request of the Third World Health Assembly, the Director-General referred to the Joint FAO/WHO Expert Committee on Nutrition the study of the problem of severe malnutrition in times of war or other disasters. Accordingly, a group of consultants was convened to consider two aspects of this problem—food management, and the organization of general relief activities in relation to nutrition; and Professor A. B. Keys, Director, Laboratory of Physiological Hygiene, University of Minnesota, USA, was asked to prepare a statement on the physiological, clinical, and therapeutic aspects of malnutrition. The results of these studies were combined into a single report, which was approved by the joint committee and presented to the Fourth World Health Assembly, and which has now been published by WHO in the *Technical Report Series*.[1]

Food Management and Organized Relief Activities

The problems arising from disruption of food supplies due to war or a natural catastrophe may increase in acuity and call for correspondingly and increasingly drastic steps for their solution :

1. Measures can be taken to prevent food shortages or to limit their severity.

2. If shortages occur in spite of preventive steps, then further measures will be required to make the best use of the food supplies that are available.

3. If these measures fail and the food shortage becomes really severe, then an organized programme of relief feeding will become necessary.

In dealing with any one of these stages of emergency, the fundamental considerations involved are food production, procurement, storage, and distribution—all of which must be subject to some sort of central administrative control. The nature of this organizational machinery may vary from country to country, but in all instances nutritional and agricultural experts will need to be called on for advice and assistance, and full co-operation and co-ordination among all relevant branches of government will be required.

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[1] *World Hlth Org. techn. Rep. Ser.* 1951, 45. Published in English and in French. Price : 2s 9d, $0.35, or Sw. fr. 1.40

Any plan for meeting food emergencies must be based upon :

1. Appraisal of total food requirements, this to be assessed in terms of calorie requirements. Attention should also be given to providing a well-balanced diet, particularly with regard to a sufficiency of proteins. Special provisions must be made for the more vulnerable groups within the population, i.e., for infants, children, pregnant and nursing women, and old people.

2. Appraisal of production possibilities. This includes tillable acreage; land use ; crop yields; availability of fertilizers, pesticides, tools, machinery, fuel, livestock feed, etc.; and potential labour-force.

3. Orientation of food production to ensure the greatest amount of food, in terms of calories, per unit of land used.

4. Storage of foods, by the government, various branches of the trade (importers, producers, wholesalers, retailers, etc.), and private householders.

5. Economical and effective utilization of foods, this requiring controls of various types.

6. Procurement and distribution of foods, including regulation of stocks, from producer to consumer; rationing systems to ensure fair distribution; and price control.

7. Public information and advisory services, to win the aid and co-operation of all population groups.

Physiological, Clinical, and Therapeutic Aspects of Severe Malnutrition

The treatment of patients suffering from starvation should aim, so far as possible, to achieve the following goals : (1) preservation of life, (2) prevention of irreversible damage to body and mind, (3) establishment of nutritional and general metabolic conditions conducive to maximal recovery, (4) restoration of morale and promotion of a psychologically healthy state of mind and emotion, (5) rebuilding the wasted tissues of the body, and (6) attainment, ultimately, of total rehabilitation. All treatment must be adjusted to the physical status of the patient. Specific measures adopted will depend, to a great extent, on the supplies, facilities, and personnel which are available.

The report gives a synthesis of information from the world literature and of the opinions of experts who have had personal experience in the treatment of starved persons. It admits, however, that scientific and medical knowledge on the treatment of starved or otherwise severely malnourished persons is incomplete and warns that serious mistakes may easily be made. Particular caution is expressed with regard to parenteral therapy, which should be kept to a minimum in starvation cases because of increased risks of pulmonary oedema and circulatory embarrassment.

Among the subjects discussed in this section of the report are: varieties of starvation and severe malnutrition; characteristics of starved persons; personnel, supplies, and equipment for treatment; treatment schedule and prognosis; parenteral therapy; and starvation plus trauma or disease. An extensive bibliography provides a guide to current knowledge on the biological characteristics of starved and malnourished persons and the problems which may be encountered in treating them.

Attention is drawn to concomitant conditions which may complicate the situation when severe food shortages arise during war or natural disasters and to general public-health measures which must not be neglected :

" Suffering and death among starving patients and in the general population during famine are not solely the direct result of food shortages and calorie inadequacy. Whenever there is mass starvation there is apt to be a breakdown in sanitary and public-health control with the consequent danger of widespread infections and epidemics. Programmes for the prevention or amelioration of the ill effects of famine must, then, give prominence to other public-health measures as well as the basic matter of nutrition. Particularly is this important in underdeveloped and in tropical countries, where sanitary control may be imperfect even in non-famine periods or where insects and other disease-vectors abound. Vaccinations, anticholera inoculations, malaria control, purification of drinking-water, and similar measures must be pursued with vigour from the start of any programme of the control and relief of famine."

Review of WHO Publications

WORLD POPULATION HAS DOUBLED IN A CENTURY

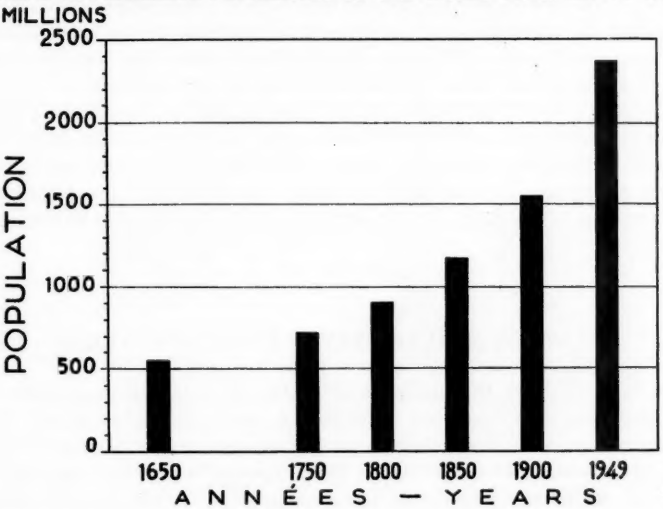
The population of the world has increased by 1.2 milliards in one century, passing from 1,171 million in 1850 to 2,378 million in 1949. Since 1650 the number of inhabitants has been nearly quadrupled (fig. 4). Attention is drawn to these facts in an article on the increase in world population prepared by Dr. S. Swaroop, Chief, Statistical Studies Section, WHO, and published in the *Epidemiological and Vital Statistics Report*.[1]

Where and when did this increase take place ? " . . . Europeans and their migratory descendants overseas experienced the greatest relative increase." In 1949 their number was eight times greater than in 1650, whereas the population figure for the rest of the world had only trebled. However, from 1900 to 1949 it was in Europe (excluding the USSR) that

[1] *Epidem. vital Statist. Rep.* 1951, 4, 162

the rate of increase was lowest : 36% as against 112% for the Americas. Yet, during the last five decades, the population of Europe has increased by 100 million. The increase has been most marked in the Netherlands (94%), Bulgaria (83%), Denmark (63%), and Portugal (55%). France and Czechoslovakia have remained more or less stationary. Ireland's population has decreased by 7% during the last half-century.

FIG. 4. APPROXIMATE POPULATION OF THE WORLD FROM 1650 TO 1949



During the same period, the inhabitants of the present territory of the USSR, which in 1900 numbered less than half those of Europe, have increased by 74 million (59%).

In 1900, the population of Africa was probably on a level with that of the Americas; but, during the first half of the 20th century, the population of the American continent rose to three times that of Africa. The most rapid increases were recorded in Argentina (251%), Cuba (231%), Colombia (217%), and Brazil (191%).

The increase in the Asiatic populations amounts to half the total increase in world population. China and India (before the partition) have been responsible for nearly a third of the world increase, although the rates of increase in these countries themselves have been relatively low, i.e., 30% and 49%, respectively. On the other hand, in some of the smaller countries, such as Indonesia, the Philippines, and Thailand, the number of inhabitants has increased by more than 100%.

It is obvious that population figures must always be treated with some reserve. In fact, in some parts of the world no census has yet been taken;

in others, the counting of the inhabitants began only during the first decade of the 20th century. The figures are uncertain with regard to vast territories such as China (where only partial censuses have been taken), Africa, and Central and South America. They are affected by wars, migrations, population transfers, famines, and natural disasters. Nevertheless, for the past few years sufficiently exact demographic data are available for about 70% of the world population. The statistics which are cited in the article under review are drawn from very reliable sources, i.e., the publications of the Statistical Office of the United Nations, the archives of the Health Organization of the League of Nations, and the International Statistical Institute, as well as various reference works on demographic problems.

In spite of being only approximate, the figures give a reliable picture of the developments which have followed progress in medicine and social hygiene in European countries, in the countries to which Europeans emigrated during the 19th century, and also, during the last few decades, in the countries of the East, such as Egypt, India, Indonesia, and Pakistan.

TREND OF SCARLET FEVER IN RECENT YEARS

A brief study of the incidence of scarlet fever in the years since the second World War has been published in the *Epidemiological and Vital Statistics Report*.[1] It shows that Europe, apart from the southern and south-western regions, still seems to be the continent where the incidence is highest. While scarlet fever has become much less serious since the beginning of the century, in many countries it has attacked a far greater number of people during recent years than in the period between the two world wars, particularly in Europe.

In large sectors of Africa and Asia for which data are available, the number of cases of scarlet fever notified during the postwar years has been relatively insignificant. This has been true also in America, except in Canada and, even more so, in the USA. However, the incidence in these latter two countries is still comparatively small in relation to that in many countries of Europe.

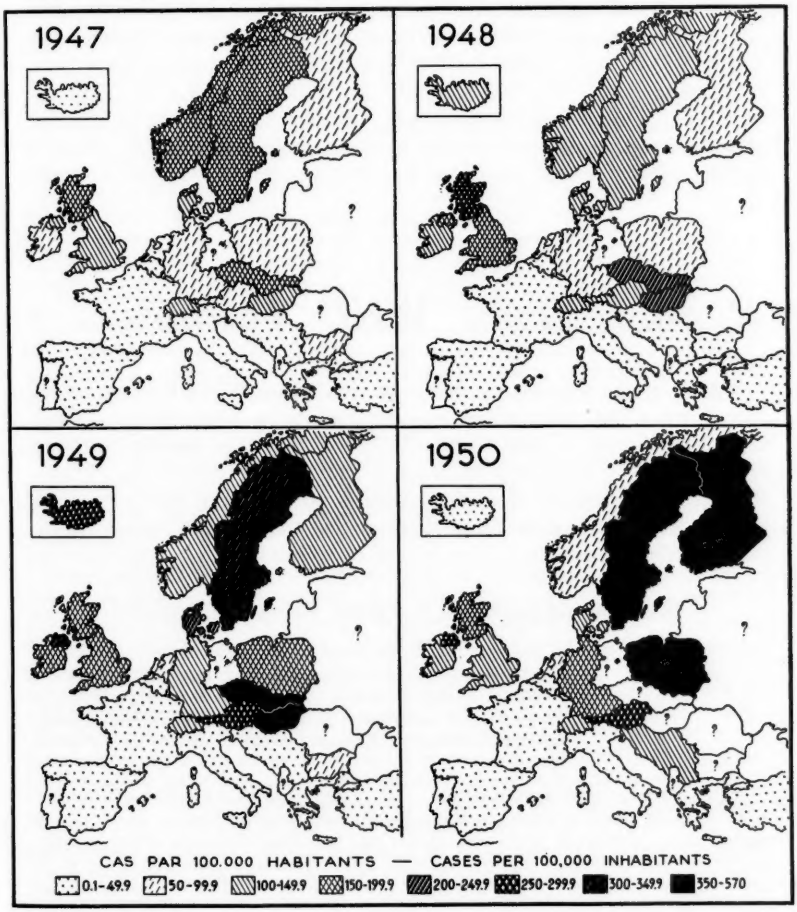
Whereas from 1946 to 1949 and 1950 the annual number of cases notified in the USA decreased from 116,000 to 75,000 and then to 57,000, over the European continent as a whole it increased from 239,000 to 420,000, and then to about 520,000. Another illustration of this comparative trend is found in the number of cases recorded per 100,000 inhabitants : from 1946 to 1950, the annual number of cases notified in Canada and the USA did not exceed 76 and 83 per 100,000 inhabitants; in Europe, on the other

[1] *Epidem. vital Statist. Rep.* 1951, **4**, 355

hand, rates above 100 per 100,000 inhabitants were recorded in 10 countries in 1946, in 9 in 1947, in 12 in 1948, and in 15 in 1949 and 1950. Sometimes there were more cases in a single European country than in the whole of the USA; for example, in 1950 there were 65,883 cases in England and Wales and 86,924 in the Federal Republic of Germany, as compared with only 56,851 in the USA.

Significant outbreaks of scarlet fever occurred in a number of countries of Europe in recent years : in Bulgaria in 1946; in Ireland and Scotland in 1948; in Austria, Czechoslovakia, the Federal Republic of Germany,

FIG. 5. CASES OF SCARLET FEVER REPORTED IN EUROPE FROM 1947 TO 1950



Hungary, Iceland, Northern Ireland, Poland, Sweden, and again in Ireland in 1949; in Berlin, Finland, Malta, Yugoslavia, and again in Austria, the Federal Republic of Germany, Poland, and Sweden in 1950; and in Finland and Spain in 1951.

The mortality caused by scarlet fever has shown a considerable decrease. In the USA, between 1944 and 1948 the number of deaths dropped from 422 to 68 annually, corresponding to a case fatality-rate of only 0.22% and 0.09%, respectively; these figures are in contrast with those for 1936, 1937, and 1938, when there were 2,493, 1,824, and 1,206 deaths, i.e., a case fatality-rate of 1.0%, 0.8%, and 0.6%, respectively. In Yugoslavia, where a particularly high morbidity-rate was recorded for 1950 (18,581 cases), mortality reached a rate lower than ever before : 37 deaths; this is in striking contrast with the rate for 1928, when there were 3,371 deaths for the 23,078 cases recorded. Only eight deaths from scarlet fever were recorded in Turkey in 1950, as compared with 400 in 1929 for an approximately equal number of cases notified. Australia, too, provides an illustration of the low death-rate from scarlet fever : from 1943 to 1948, the total number of deaths was not more than 112 for the 59,098 cases notified.

Reports from WHO Fellows

Many of the letters and reports received from WHO Fellows are of such interest that they deserve to be read by a wider public. They demonstrate more vividly than a series of facts and figures both the character of the fellowship programme and the response of the Fellows themselves. Selections from these reports are therefore published from time to time, but it must be emphasized that the opinions expressed are those of the Fellows.

Environmental Sanitation in Certain European Countries

Professor M. P. Horwood, of the Massachusetts Institute of Technology, Cambridge, Mass., USA, was granted a three-month WHO fellowship to observe teaching, research, and practice in environmental sanitation in Denmark, England, Finland, France, and the Netherlands. Extracts from Professor Horwood's report follow.

" One of the outstanding impressions ... is ... that instances of excellent achievement in one or more phases of environmental sanitation exist in every country. In one case it may be water purification, while in another it may be sewage treatment, refuse disposal, swimming pool sanitation, improved housing, rodent control, or some other aspect of environmental sanitation... In Finland, for example, a special effort was being made to

improve rural sanitation, a problem of great magnitude and acuteness in almost every land. Despite the existence of outstanding achievement in one or more phases of environmental sanitation in each country, it is impossible to avoid the general conclusion that the great public-health need in the five European countries observed is a more extensive and effective programme in environmental sanitation.

" The level of attainment in milk and food sanitation leaves very much to be desired. Domestic and even industrial refrigeration of foods is either not practised at all or is practised only to a limited degree. In general, people depend on climatic conditions to preserve perishable foods against spoilage and serious bacterial multiplication, rather than on artificial refrigeration... The problem is further complicated by the universal lack of suitable hand-hygiene facilities and the absence of good hand-hygiene practice. In consequence, foods are frequently contaminated and infected, and the transfer of infection through the medium of soiled hands must be extensive. If there is any validity in the germ theory of disease and in the normal modes of transmission of infection, there is then great need in these European countries for improved hand-hygiene facilities, for the elimination of the common roller towel, and for the development of a health-education programme leading to better hand-hygiene by food handlers as well as by the general population.

" There is also great need for more adequate and effective supervision over the production and handling of milk supplies and over the pasteurizing process itself. The time and temperature of pasteurization are not uniform in the various European countries under consideration... It was rare to find pasteurization by the holding method in actual practice. The more economical pasteurizing process, namely, the short-time, high-temperature method, is the procedure normally in use. Bacterial supervision is employed very rarely. The phosphatase test is not employed on every batch of milk pasteurized but is employed at intervals of once a week and sometimes even less frequently. In Helsinki, pasteurization is practised only during the warmer months of the year, hence the milk supply of this large city is protected against communicable diseases only to a limited extent each year. Great progress... has been made in England, Finland, and Denmark in the elimination of bovine tuberculosis among dairy cattle... In fact, in Denmark 100% of the dairy cattle are tested for tuberculosis annually, and all reactors are eliminated. In France, however, the milk supply is protected primarily through heat treatment rather than through sanitation or the tuberculin-testing of dairy cattle.

" On the Continent, the tendency is to avoid the use of chlorine to ensure the safety of municipal water-supplies. Chlorination is frequently omitted because it requires special equipment and the use of chemicals, both of which add to the cost of treatment. It is also maintained that Europeans object to drinking chlorinated water. While it is unnecessary to chlorinate water so heavily as to make it objectionable for drinking purposes, American public-health practice indicates definitely that ultimate safety from water-borne disease can be achieved only through the disinfection of water supplies immediately before they enter the distribution system. An educational programme should be inaugurated, the aim of which should be the ultimate protection of municipal water-supplies in Europe through chlorination...

" There is also great need for standardizing the bacteriological examination of water supplies to determine their safety for drinking purposes... It is suggested... that, since this is a fundamental question of primary importance to the public health, a co-operative study should be inaugurated under the leadership of the World Health Organization which will result in a uniform method of examining waters bacteriologically...

" Since effective work in environmental sanitation leads definitely to the prevention of disease and to the improvement of vital resistance, further effort in this respect is greatly needed to provide a suitable foundation for the excellent programmes of medical care that are already available... Coupled with the more effective control of the environment, an energetic campaign should be waged in personal and popular health-education,

with particular reference to personal hygiene; the prevention of contact-borne diseases; the sanitary production, handling, and safeguarding of milk supplies; the proper protection of food supplies; and various other aspects of the broad field of environmental sanitation."

Notes and News

Regional Directors for Europe and Africa Appointed

The nominations of Dr. N. D. Begg as Director of the WHO Regional Office for Europe and of Dr. F. Daubenton as Director of the WHO Regional Office for Africa were confirmed by the Executive Board at its ninth session. Both Dr. Begg and Dr. Daubenton have been acting as regional directors since being nominated by the respective regional committees in September 1951.[1, 2]

Dr. Begg, who studied at Aberdeen University and the Royal College of Physicians, London, is a specialist in public health and the author of several publications on communicable diseases. He was Medical Superintendent of the Eastern Communicable Diseases Hospital, London, following which he went to Poland as Chief Medical Officer for UNRRA. He later served as head of the WHO mission to Poland. On its establishment on 1 January 1949, Dr. Begg became Chief of the WHO Special Office for Europe.

Dr. Daubenton studied at Utrecht University, Lausanne, St. Bartholomew's (London), Johannesburg, and the London School of Hygiene and Tropical Medicine. He had 25 years' experience in Africa as one of the consulting medical officers for the Witwatersrand Gold Mines, Union of South Africa, and in various public-health posts. Before joining WHO he was Deputy Chief of Staff of the Netherlands Military Government and, later, Director-General of Medical Services for the Royal Netherlands Army, with the rank of Lieutenant-General. In 1948 he headed the WHO mission to Ethiopia, and in 1949 was WHO consultant in public-health administration in the Eastern Mediterranean Region. In late 1950 Dr. Daubenton was named Chief of the WHO Office for Africa.

The WHO Regional Office for Europe will continue to be located, temporarily, at Geneva Headquarters. The Regional Office for Africa will be established in Brazzaville, French Equatorial Africa.

WHO Team of Medical Scientists Visits South-East Asia

A team of eleven medical scientists, drawn from nine countries, has undertaken a WHO mission to three countries of South-East Asia—India, Burma, and Ceylon. Following the pattern of previous projects of this type, such as those in Israel and Iran last year,[3] the visiting professors will give lectures, engage in practical work in their respective fields, in collaboration with host scientists, and give advice on their specialities, upon request, to governments of the countries visited.

The team arrived in Calcutta on 4 February and proceeded to Rangoon, Burma, on 13 February; from there it will go to Colombo, Ceylon, on 5 March. The tour is expected to end on 7 April.

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[1] *Chron. World Hlth Org.* 1951, **5**, 312
[2] *Chron. World Hlth Org.* 1951, **5**, 311
[3] *Chron. World Hlth Org.* 1952, **6**, 6, 9

The members of the team are :

Dr. E. W. Andersen, Director of Anaesthesia, Copenhagen County Hospital, Denmark
Dr. F. S. P. van Buchem, Professor of Medicine, University of Groningen, Netherlands
Dr. E. W. H. Cruickshank, Professor of Physiology, University of Aberdeen, Scotland
Dr. M. Florkin, Professor of Biochemistry, University of Liège, Belgium
Dr. J. E. Gordon, Professor of Preventive Medicine and Epidemiology, Harvard University School of Public Health, Cambridge, Mass., USA
Dr. E. Husfeldt (Chairman), Professor of Surgery, Department of Thoracic Surgery, University of Copenhagen, Denmark
Dr. M. R. MacCharles, Associate Professor of Surgery, University of Manitoba, Winnipeg, Canada
Dr. H. O. Schild, Reader in Pharmacology, University College, London, United Kingdom
Dr. B. Vahlquist, Professor of Paediatrics, University of Upsala, Sweden
Dr. E. R. Williams, Director of Diagnostic Radiology, St. Mary's Hospital, London, W.2, United Kingdom
Dr. E. Grzegorzewski, former Professor of Public Health and Rector of the Medical Academy of Gdansk, Poland; now Director of Division of Education and Training Services, WHO

Venereal Diseases and Treponematoses

International maritime venereal-disease-control centre

An international centre for the control of venereal diseases among seafarers was opened on 21 December 1951 at Rotterdam, the Netherlands. WHO is providing international personnel and fellowships for training courses which will be given at the centre, as well as certain supplies. The Government of the Netherlands is making available for the project special facilities in the Rotterdam Maritime Health Centre. The new centre has facilities for studying and demonstrating modern techniques of venereal-disease control, particularly with reference to maritime problems. Several study-groups have been established, and short-term training courses will be arranged for medical officers, nurses, laboratory technicians, and social workers from various countries. The project is directed by Dr. E. H. Hermans, Chief Medical Officer of the Rotterdam Anti-Venereal-Disease Association.

Rotterdam was chosen as the site for this demonstration project because it is the largest port for overseas shipping in Europe, as well as the terminus of most shipping coming down the Rhine River. It is also the technical centre for the International Anti-Venereal-Disease Commission of the Rhine, of which Belgium, France, Germany, and Switzerland are members.

Haiti project

A report on the WHO/UNICEF yaws-eradication and rural syphilis-control programme, which has been in progress in Haiti since 1950, reveals that, from 20 July 1950 to 30 October 1951, 642,338 persons were treated, of which 341,318 showed signs of skin diseases, including yaws.

Malaria-Control Project in Burma

A WHO malaria-control demonstration team which arrived in Lashio, Burma, in early October 1951 reports satisfactory progress in its preliminary activities. An area of about 670 square miles (1,735 square kilometres), with a total population of not less than 40,000, has been demarcated for the first year of operations; a check area and an

area for extension of operations in the second year have been selected. In a spot spleen survey, a spleen-rate of 94% was found. A regular post-transmission-season malariometric survey of the whole area has been started. Entomological surveys and training of locally recruited staff have also been initiated.

International team members in this project are Dr. E. B. Weeks, senior adviser; Mr. S. K. Sobti, entomologist; and Mr. V. Venkat Rao, sanitarian.

Leprosy Adviser for Ethiopia

Dr. Mustafa Kamel, Director of the Amriya Leprosy Colony, near Alexandria, Egypt, has been appointed by WHO to undertake a one-year assignment as leprosy adviser to the Government of Ethiopia. Dr. Kamel will follow up the antileprosy work begun last year by Dr. M. A. K. Dalgamouni, whose survey and treatment project was also sponsored by WHO.[4]

Dr. Kamel has studied leprosy control in the Philippines and India as well as in Egypt, where he has held a number of posts : Inspector of the Leprosy Section of the Egyptian Ministry of Health, Chief Medical Officer of the same Section, and Director of the Abu-Zaabal Leper Colony, near Cairo.

Health Education Aid Given in Ecuador

Mr. F. Sequeira, a health educator of the Department of Public Health of El Salvador, was sent by WHO to Ecuador, where he gave lectures on health education to staff members of the Department of Public Health, the Ecuadorean League against Tuberculosis, members of the Press, the staff of the Department of Public Education, teachers, and personnel at health centres. In Guayaquil, Mr. Sequeira trained four persons in various health-education methods and techniques. In addition, he aided the Director-General of Public Health of Ecuador in outlining a permanent plan of health education for the republic.

WHO Publishes Vaccination Requirements of 132 Countries

WHO has recently published in its *Weekly Epidemiological Record*[5] a list of the vaccinations required of travellers arriving by land, sea, or air in 132 countries and territories. Most commonly required are certificates of vaccination against smallpox, yellow fever, and cholera; inoculation against typhoid and paratyphoid fevers, typhus, diphtheria, and tetanus is occasionally demanded.

Publication of this list of requirements does not imply that all have the sanction of WHO. For the majority of the countries listed, these requirements appear for the last time under the authority of the 1944 International Sanitary Conventions, which will be replaced from 1 October 1952 by the International Sanitary Regulations which were adopted by the Fourth World Health Assembly.

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[4] *Chron. World Hlth Org.* 1951, **5**, 28, 58

[5] *Wkly epidem. Rec.* 1952, **27**, Supplement to No. 267, 7 February

Views on WHO

International Pharmacopoeia

In a recent article in the *Pharmaceutical Journal*, London (1951, **167**, 423), volume I of the *Pharmacopoea Internationalis*, which has just been published by WHO, is critically reviewed :

" The long-promised International Pharmacopoeia, produced to encourage national pharmacopoeias to adopt a uniform terminology and similar standards for corresponding drugs, presents little from a chemical standpoint that is entirely new to British pharmacists. Of the two hundred monographs in this first volume, more than three-quarters of them are on inorganic and organic chemicals, and all but thirteen of these substances are included in either the B.P. [*British Pharmacopoeia*] 1948 or the B.P.C. [*British Pharmaceutical Codex*] 1949. . . . In addition to materials required for pharmaceutical purposes, both well-established and new therapeutic agents are included; antimalarials, organic arsenicals, barbiturates and sulphonamides are well represented, but the antibiotics have to await the publication of Volume II because of the difficulty of securing agreement on standards and methods of control. It is rather surprising, however, to find obsolescent drugs like bromoform and caffeine and sodium salicylate gaining inclusion.

" Little criticism can be made of the form and general arrangement, for these follow the practice of most modern pharmacopoeias . . . The large-size type and generous spacing make the book easy to read and prominent side-headings facilitate reference. Latin titles are used for the monographs and . . . the British pharmacist will find that most of the names are already familiar. Once the reader remembers that potassium and sodium are called kalium and natrium to correspond to their chemical symbols, little difficulty is experienced in finding a particular monograph. This task can be further simplified by reference to an easily readable list of contents at the beginning of the book or the comprehensive index at the end.

" The individual monographs are arranged similarly to those in the B.P. It is a pity, however, that the intended unification does not extend to the structural formulae when these are given. In the case of deoxycortone acetate and dicoumarol on opposite pages, lines of different thickness have been used to represent the ring systems, while the line formula for anaesthetic ether is in different type from that used for amphetamine. . . . The system of the International Union of Chemistry has been chosen for the chemical nomenclature and the Patterson Ring Index . . . for the structural formulae and numbering; there are thus numerous differences in the chemical names of organic substances.

" The tests and standards agree, in general, very closely with those given in the B.P. or B.P.C., and where differences occur it is probable that in most cases the national standards can be brought into line with the international standards without much difficulty. In other cases, however, the differences are quite significant and it is interesting to note that the standards for opium alkaloids are more stringent; narrower ranges for anhydrous morphine content are given for morphine hydrochloride and prepared opium, while the range for morphine sulphate is higher than that in the B.P. . . .

" Storage conditions are given for each substance, and the characteristics of the different types of containers which are specified are described in the General Notices; the difference between a well-closed container and a tightly-closed container is now explained. The meaning of such general terms as freely soluble, slightly soluble and sparingly soluble, etc., is also clarified by a table giving the approximate solubility associated with these expressions. This should prove a useful guide for compilers of national

pharmacopoeias and result in more consistent descriptions being given to this physical property.

" The appendices also follow a pattern similar to that of the B.P. and much of the material is identical. . . . An alternative method of performing the limit test for arsenic is described in which the brown colour developed in aqueous solution on heating arsenic with hypophosphorous acid is made the basis for comparison. This test is in some continental pharmacopoeias and by the offer of a choice for their national volume those countries that wish to co-operate in the unification will be able to do so without the necessity of drastic changes.

" Provided the committees responsible for the production of the national pharmacopoeias can be persuaded to be a little more cooperative than their political counterparts, there is no reason why the International Pharmacopoeia should not fulfil its declared aim of encouraging a more uniform system for pharmacopoeias throughout the world."